

ARNOLD ARBORETUM

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Grape Vines. Summer is the time to study Grape Vines as ornamental plants for they do not unfold their leaves until late in spring and the first severe frost blackens them in early autumn. For the summer covering of walls or fences, to spread over hillsides and among rocks, or to train over arbors, no other vines compare with them in vigor and rapidity of growth, or in beauty of foliage. The fragrance of the flowers, too, of several of the species should find a place for them in gardens. The Arboretum collection of Grape Vines is a large one and contains all the North American species, with the exception of two or three species which grow only in the extreme southern states and the California species which does not take kindly to the conditions which it finds in the eastern states. The collection contains, too, several Asiatic species. The plants have been trained on a long trellis on the upper side of the Shrub Collection in order to make it easy for students to compare the different species growing under the same conditions and note the variation in the shape, size and color of the leaves. Grape Vines, too, have been largely used for covering the boundary walls of the Arboretum, and their value for this purpose can be well seen near the Jamaica Plain and Forest Hills entrances, and on Centre Street above the gate of that name. An example of the way in which Grape Vines can be used for covering bare ground can be seen at the junction of the Meadow and Bussey Hill Roads. Here the plants are cut back severely every spring. Although the Arboretum has made it possible for garden lovers to become acquainted with the beauties of these plants, they are apparently little appreciated or planted and it is impossible to find several of the handsomest of the American Grape Vines in American nurseries.

Among the species unknown in most gardens, although well worth a place in any park or garden where handsome plants are valued, are *Vitis Doaniana* and *V. cinerea*. The first is a native of the Texas Panhandle and in the Arboretum has proved to be a fast-growing and hardy plant. The leaves are large and thick, and their pale bluish green color gives to this plant a distinct appearance. The fruit, which is covered with a glaucous bloom, is arranged in small clusters. *Vitis cinerea*, which is sometimes called the Sweet Winter Grape, has large, nearly entire or slightly three-lobed leaves which are dark green on the upper surface and gray on the lower surface which, like the young shoots, is covered in spring with thick gray tomentum. The berries are small and black and destitute of bloom. When Jacques Cartier sailed up the Saguenay in 1535 Grape Vines covered with fruit fired his imagination. The plant he saw was the Frost Grape, *Vitis vulpina*, with its shiny and usually three-lobed leaves and small, juicy, acid blue fruits. A better acquaintance probably cooled the Frenchman's enthusiasm for the wonderful fruits of the New World. *Vitis vulpina* grows further north than the other American species and is a common river-bank plant in the northern states as far west as the Dakotas and Kansas. Excellent jelly is made from the fruit. A species of the middle states, the Frost or Chicken Grape, *Vitis cordifolia*, can also be seen in the Arboretum. From *Vitis vulpina* it differs in its unlobed or only slightly lobed leaves and in their much smaller stipules. The small bluish black berries in large clusters do not ripen until after severe frost when they become sweet and edible. The Frost Grape is one of the largest and most vigorous of the American species, often growing to the tops of the tallest trees and forming stems from one to two feet in diameter. A more slender and smaller plant, *Vitis palmata*, with leaves deeply divided into long-pointed lobes and sweet black fruit is one of the most distinct of all the American Grape Vines. Its small size makes it more suitable for small gardens than the larger and stronger growing species. The small, distinctly gray-green leaves make the species of the southwestern states, *Vitis arizonica*, one of the interesting plants of the collection, although for the purpose for which Grape Vines can be best used in ornamental planting it is one of the least valuable of the American species. It is not very hardy and requires winter protection to insure its best growth. Another interesting Grape Vine, *Vitis rupestris*, has little to recommend it as a garden plant. It grows only a few feet tall and the small shining leaves are abruptly pointed and coarsely toothed. The small sweet fruit in small compact bunches ripens in summer. This little Grape Vine is said to grow from southern Pennsylvania to Missouri and southward, but it is most abundant on the low limestone hills of western Texas. For pomologists the northern Fox Grape, *Vitis labrusca*, the common wild Grape Vine of eastern Massachusetts, is the most important for by selection and hybridization it has produced most of the table grapes which can be successfully grown in the open ground in eastern North America. The berries of the wild plant are thick-skinned with tough musky pulp. This peculiar flavor is retained in a greater or less degree in the cultivated varieties, and distinguishes them from the varieties of the European grapes which cannot be successfully grown in the open in eastern North America. Apart from its fruit the northern Frost Grape is

one of the handsomest of the northern species, for the leaves, which vary in size and lobing on different individuals, are thick, dark green and lustrous above and covered on the lower surface with tawny white, tan-colored or red-brown felt which is also found on the young stems and branches. Several forms of this vine are in the Arboretum collection. The summer Grape of the northern and central states, *Vitis bicolor*, is an even handsomer plant, and perhaps the handsomest of our northern Grape Vines. The large leaves are usually deeply lobed, and dark green above are pale blue-green below. These are only a few of the American Grape Vines in the collection. The large-fruited Muscadine or Southern Fox Grape, *Vitis rotundifolia* of the southern states, has not yet proved hardy in the Arboretum. From this species, after *V. labrusca* the most important pomologically of the American Grape Vines, has been produced the Scuppernong grapes, favorites in the southern states.

To Japan we are indebted for *Vitis Coignetiae*, the handsomest Grape Vine which can be grown in the northern states. No other species is more hardy, grows so vigorously, or produces such large leaves which are thick, prominently veined and pale on the lower surface; they turn bright red in the autumn, and as this is a northern species their fading colors are more brilliant in northern New England than they are in Massachusetts. The small blue fruit which is eaten in Hokkaido has little to recommend it to the American palate. *Vitis amurensis* from eastern Siberia, Mongolia and Korea is an old inhabitant of the Arboretum. It is a handsome and perfectly hardy plant, but not superior as a garden plant to several of the American species. The Japanese *Vitis pulchra* is distinct in the dark red color of the leaves and shoots in spring, and is a handsome and interesting plant. This Vine is known only from cultivated plants, and only the male plant is in the Arboretum collection.

The Chinese *Vitis Davidii* is interesting to the students of these plants for, unlike those of other Grape Vines, the stems are covered with sharp spines. The leaves turn bright red in the autumn. Unfortunately the stems are killed down to the ground by the cold of our severest winters, and this remarkable plant rarely produces fruit in this climate. Equally interesting, perhaps, is another Chinese species, *Vitis Pagnuccii*, with some leaves which are scarcely or not at all lobed and with others on the same branch which are deeply and variously lobed much like those of the Virginia Creeper. Wilson discovered a number of handsome Grape Vines in western China and most of them have been raised in the Arboretum. Not many of these new species have been really hardy here, and it does not now appear probable that any of them will prove good garden plants in this climate.

Excellent white and purple grapes, varieties of the European *Vitis vinifera*, are grown in northern China for the Peking market on the descendants of plants brought centuries ago by the overland route probably from Persia or Asia Minor. In Peking the plants are laid down and covered with earth during the winter, and produce large crops of fruit which the Chinese are able to keep until spring in cool cellars. This Grape has been growing in the Arboretum for sixteen years with only slight winter protection, and the green-fruited variety has produced fruit

here several times. This is the only form of *Vitis vinifera* which it has been possible to grow here, and it would seem to be a good subject for plant breeders anxious to produce better grapes for northern markets.

Chinese Roses. The severe winter like that of 1917-18 has injured several of the Roses of western China, although apparently none of them have been killed. *Rosa Helenae*, the handsomest perhaps of the Roses discovered by Wilson, has lost much of its wood and will not flower this year; and *Rosa multibracteata*, which has not been injured before, has been killed to the ground. The Chinese form of *Rosa Roxburgii* (var. *normalis*), which flowered last year for the first time in the Arboretum, has had no flowers this season, although the wood has not been much injured. *Rosa Moyesii* has been little injured, but has flowered very sparingly and in the Arboretum has never lived up to the reputation it has gained in England. *Rosa Hugonis* was not injured by the winter, but it did not produce quite such a large crop of flowers as in previous years, and one exceptionally hot day nearly ruined these just as they were opening. No new development among Roses shows that the beauty of the flowers of Father Hugo's Rose is equalled by that of any other Chinese species. Uninjured by the cold of the past winter, the form of *Rosa multiflora* from western China (var. *cathayensis*) has not before been more thickly covered with its pale pink clustered flowers. This Rose can be grown as a bush with long arching stems as it appears in the Arboretum, or it can be used successfully to cover a large arbor, as it has in another Massachusetts garden. The flowers are as beautiful as those of most of the popular Rambler Roses of garden origin, and the plant is hardier than many of these Roses. To the students of Roses this form of *Rosa multiflora* is of interest as the wild type from which the Chinese obtained the popular "Crimson Rambler" Rose which for centuries before it was brought to this country had been a popular garden plant in China. *Rosa bella*, introduced by the Arboretum from northern China into western gardens, has never been injured here by cold. It is a tall stout shrub which produces every year in June great numbers of large rose-red flowers followed by showy fruits. A good garden plant for cold countries, *Rosa bella* might in the hands of a skilful plant-breeder have a useful influence in a new race of hardy Roses. The winter has not injured *Rosa caudata* which promises to be one of the most useful of the western China Roses. It is a Cinnamon Rose and a vigorous growing shrub now more than six feet high, with stout arching stems covered with stout spines, handsome foliage and flowers two inches in diameter with pure pink petals marked with white at the base. The broad flower-clusters sometimes contain as many as twenty-five flowers, and as these open gradually the plant remains in bloom during at least a couple of weeks. The value of this Rose as a garden plant is increased by the fact that it is one of the few Roses in the collection which flower in July, and that its large orange red fruit is exceptionally handsome. *Rosa omeiensis* was not hurt during the past winter, but the form of this Rose (var. *pterocantha*) with the stems furnished with large bright red translucent spines lost considerable wood in the Shrub Collection.

These Bulletins will now be discontinued until the autumn.